

Full Distribution in Objectivity/DB

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Abstract

Objectivity/DB has delivered to production use a fully distributed object DBMS architecture, where full distribution includes distribution of data and control, as described here. Distribution of data allows objects to reside and execute anywhere on the network, and to be used anywhere on the network, transparently, by users and applications that need not be aware of the object's actual location, and without any server bottlenecks. This includes any mixture of heterogeneous platforms and operating systems (from among those currently supported), with creation, use, sharing, and storage of objects on any platform and environment, regardless of byte ordering, floating point formatting, data alignment, etc. Distribution of control allows users and applications to access multiple databases in a federated database. Each database is under separate administrative control, with its owner deciding when to shut it down, control access, etc., yet all database services are transparently available across databases, including inter-object associations, transactions, composite objects with propagating methods spanning databases, etc. This allows any mapping of personal, group, departmental, and enterprise databases, or design, test, manufacturing databases, etc. All of this is supported by an architecture of object manager, storage manager, and network manager that uses intelligent clustering, multiple levels of caching, and direct in-memory pointer swizzling to achieve speeds comparable to native in-memory pointer chasing for second traversals, yet scale with approximately constant objects/second performance into the multi-terabyte range, as currently measured in customer applications into the gigabyte-plus range.

Dr. Wade is co-founder and vice president of product management at Objectivity Inc. Now in his third high-technology start-up, Dr. Wade is responsible for standards activities, strategy, and product management activities. Dr. Wade started his career at Hewlett-Packard, where he designed and implemented a CAD database including support utilities and an interactive query program. He then joined Daisy Systems Corp., as one of its earliest employees, where he designed and developed the database and foundation that served numerous applications with the fastest performance in the industry. Dr. Wade advanced to senior vice president of the Electrical Design Automation Group and was responsible for ECAD design, development, product marketing and customer support during the time when Daisy went public as the leader in the CAE business with revenues in excess of \$100M per year. He was then vice president of engineering at Digital F/X, a company which successfully introduced a state-of-the-art video processing system. Dr. Wade holds a Ph.D. in mathematical physics from the University of California at Berkeley and a B.S. from M.I.T.

Objectivity Inc., is located at 800 El Camino Real, Menlo Park, CA 94025, and provides object-oriented database management software and support services worldwide. For additional information contact the company at (415) 688-8000. call me at (510)642-3417 or fax me at (510) 642-5615.